



A.D. 1768 N^o 895.

S P E C I F I C A T I O N

OF

JOSEPH HATELY.

FIRE ENGINE AND BOILER.

L O N D O N :

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HATELY'S SPECIFICATION.

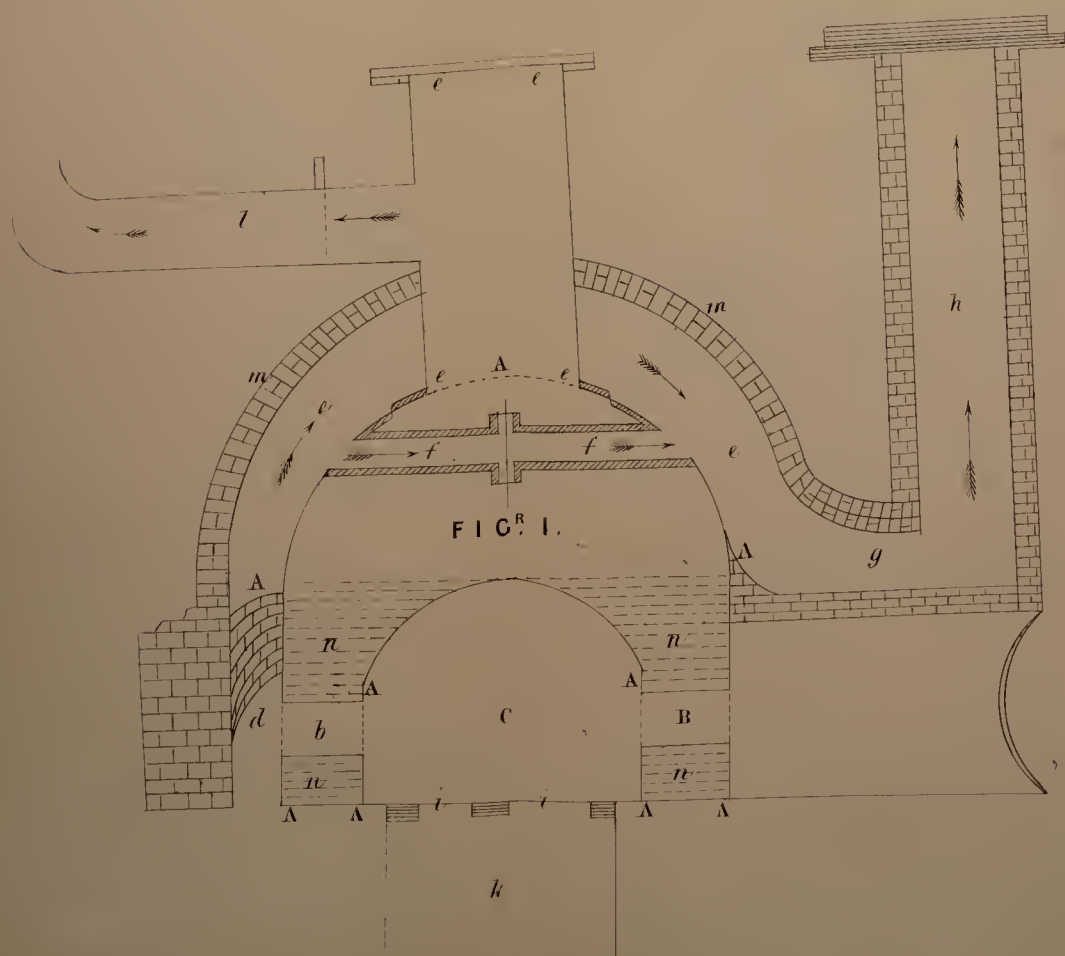
TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JOSEPH HATELY, of Borrowstonness, in the Shire of West Lothian, in North Britain, Gentleman, send greeting.

WHEREAS I, the said Joseph Hately, did, by petition to the King's most
5 Excellent Majesty, humbly shew that I had found out and brought to perfection "A NEW FIRE ENGINE, WITH A BOILER, BOTH OF A PARTICULAR SORT;" that the engine was so constructed that its power is greatly increased without enlarging the cylinder, and the boiler was so made as to save greatly the
10 expence of fuel, and both so constructed as to become of general utility to His Majesty's subjects; and that, therefore, as well as for other reasons contained in the said petition, I, the said Joseph Hately, did pray His said Majesty to grant unto me, my executors, administrators, and assigns, His Royal Letters Patent, for the sole use and benefit of the said Invention within that part of His said Majesty's Kingdom of Great Britain called England, His Dominion
15 of Wales, and Town of Berwick upon Tweed, and also within His said Majesty's Plantations and Colonies abroad, for the term of fourteen years; to the prayer of which petition His said Majesty was most graciously pleased to condescend, and Letters Patent agreeable thereto have accordingly passed the Great Seal.

Hately's Improved Fire Engine and Boiler.

NOW KNOW YE, that I, the said Joseph Hately, in compliance with and in performance of a proviso or condition contained in the said Letters Patent, do hereby describe and ascertain the said Invention in manner following (that is to say):—

The peculiarities of this boiler are, that the bottom of it is level with the 5 fire-grate, and an arch is thrown over the top to heat the steam before it enters the cylinder, and after the steam is raised in the boiler it is again heated before it passes into the cylinder; in this draft the steam is proposed to be heated by means of an arch raised over the top of the boiler, through which the flame passes before it enters the chimney; the same effect may be pro- 10 duced by the pipes which convey the steam to the cylinder passing through the fire. It likewise will be of the greatest utility by evaporating the greatest quantity of water with the least quantity of fuel. The peculiarities of this cylinder are, that it is a double one, and the piston also double, in order that cold water may constantly be circulating betwixt the two, which will more 15 fully appear by the following draught and explanation (that is to say):—Fig^r 1, A, A, A, A, A, A, A, A, the boiler; B, *b*, two caves made through the bottom part of the boiler into the fire at C; one of them (B) to put in the fuel at the other (*b*), for leading the flame into the flue *d*, which revolves once round the boiler, and then enters into a cave *e, e*, under an arch made of brick or stone 20 *m, m*, over the top of the boiler; *f, f*, two iron pipes, which convey the fire through the steam in the boiler; *g*, the entrance into the chimney *h*; *i, i*, the fire-grate; *k*, the ash pit; *l, l, l, l, l*, the receiver and pipe to convey the steam into the cylinder; *n, n, n, n*, the water in the boiler. Fig^r 2, A, A, A, A, the engine cylinder; B, B, B, B, a second cylinder that may be made of mettle, 25 wood, brick, or stone; C, C, the cylinder bottom, to which both cylinders are screwed at *d, d, d, d*; *e, f, g, h*, the injection pipe, the discharging pipe, the steam pipe, and siufting pipe, which may be occasionally apply'd to the side of the cylinder; *i, i, i, i*, the cavity or space between the two cylinders, to be filled and constantly supply'd with cold water by means of a pipe that 30 conveys it to the bottom of the cavity, which again discharges itself at the top, in order to keep the interior cylinder as cool as possible; *k, k, k, k*, the double or hollow piston in the cylinder, the cavity of which is likewise to be kept full of water and supply'd through the pipe *m*, and discharged at *n*. Fig^r 3, A, B, C, a segment of a wheel framed into its shaft D, D, with the 35 pieces of timber *e, f, g, h, i*; *k, k*, the chains to be join'd to the pump rods in raising of water, and, where necessary, to the other several purposes for which the said engine is intended, that is to say, grinding of corn, rolling and slitting of iron or any other mettles, boring of cylinders, guns, pipes, &c., or



Hately's Improved Fire Engine and Boiler.

any other purpose where power is required. *l, l*, the piston chain on the shaft D, D. And I, the said Joseph Hately, do hereby aver and declare that the above is a true, full, and perfect description of the nature and practice of the said Invention.

5 In witness whereof, I, the said Joseph Hately, have hereunto set my hand and seal, the Thirtyeth day of June, in the eighth year of the reign of our Sovereign Lord George the Third, by the grace of God, of Great Britain, France, and Ireland, King, Defender of the Faith, and so
10 forth, and in the year of our Lord One One thousand seven hundred and sixty-eight.

JOSEPH HATELY. (L.S.)

Sealed and delivered (being first
duly stamp'd) in the presence of

ALEXANDER MOFFET.

W^m JEFFREYS.

15

AND BE IT REMBRED, that on the aforesaid Thirtieth day of June, in the year last above menconed, the aforesaid Joseph Hately came before our said Lord the King in His Chancery, and acknowledged the Specification aforesaid, and all and everything therein contained and specified, in form above
20 written. And also the Specification aforesaid was stamped according to the tenor of the Statute made in the sixth year of the reign of the late King and Queen William and Mary of England, and so forth.

Inrolled the Fifth day of July, in the year above mentioned.

W^m JEFFREYS, a Ma^r Extry.

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